US Army Corps
of Engineers
New England District

Yankee Engineer

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Our bridges are safe

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Yankee Voices

Tim Russell
Buffumville Lake

Safety Message: Sun Sensitivity

According to the Mayo Clinic, some common prescription and over-the-counter medications can make your skin extra sensitive to sunlight, so that you can develop a severe sunburn in just minutes.

Drugs to watch out for include many antibiotics; some medications for cholesterol, high blood pressure, and diabetes; ibuprofen and naproxen; and the acne treatment Accutane.

Be sure to ask your doctor about sun sensitivity when you are given a new prescription. If your skin does become more sensitive to sunlight, cover up, wear a hat, and stay out of direct sunlight as much as possible.

While sunscreen may help by blocking a portion of the UV spectrum, in some cases chemicals in the sunscreen may actually make the problem worse. *(Ideas Unlimited)*

On the Cover: *Vehicles travel over the New England District's Bourne Bridge in Bourne, Mass., on a typical summer day. Photo by Kevin Burke*

Congratulations

…to **James West** and his wife, **Autumn**, on the birth of their first child, daughter **Violet**, July 13.
…to **Jim Kelly** and his wife, **Denise**, on the birth of their first child, daughter **Shannon Elizabeth**, July 26.
… **Jennifer Flanagan** who was named the WE Committee's Employee of the month. Flanagan was recognized for her efforts as the Technical Lead for several federal projects including the DIA facility rehab, the INS Border Station in Jackman, Maine, and the DeCA Meat Department Renovation PDT.

Welcome

Danny Bartolome	Construction/Operations
Robert Cannon	Construction/Operations
Maureen Davi	Real Estate
Donald Fillman	Construction/Operations
Leslie Lovick	Human Resources
Paul Lyver	Construction/Operations
John McCarten	Construction/Operations

USACE Four "Rs"

Relevant – Our values, capabilities, agility and contributions make us relevant.

Ready – We understand and anticipate the needs of our partners, customers and the nation so when we are needed, we are ready to provide support and solutions.

Responsive – Our emphasis is on selfless service, putting the mission and those we serve before ourselves, and maintaining our technical capabilities.

Reliable – We meet the commitments of those we serve, we are accountable for our actions and we wisely use the resources entrusted to us.

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Commander's Corner:
FY07 - The fourth quarter is ours

by Col. Curtis L. Thalken
District Commander

Fall is fast approaching and with it—football! So please humor me as I drag out another football analogy.

During my cadet days, if we were behind in a game we used to shout, "the fourth quarter's ours!" The intent was to demonstrate to the team that we believed they could rally and be victorious by the end of the game. I believe the challenges we face in executing our FY07 work plan warrant the same rallying cry.

This year's budgetary process resulted in uncertainty well into the third quarter. Once we received our approved budget, we developed a plan to execute for the remainder of the year. However, midway through the fourth quarter we have fallen behind in our execution for many of our programs.

So now I would like to rally us to catch up and meet our scheduled commitments. Our FY07 work plan was built based on our assessment of our capability to complete work. We developed it and therefore we alone are accountable for delivering what we committed to deliver. As I have mentioned before, the best way to ensure future work is to deliver current work on time and under our budget estimates.

Additionally, we all know winter in New England can arrive early, wrecking havoc with schedules that have "slipped to the right."

For many of our civil works customers, failure to complete required work in and around the region's rivers can leave communities susceptible to spring flooding. We cannot permit this to occur. Our charge is to serve and in many cases protect the citizens of New England. To me this fact alone should motivate us to ensure necessary work is completed, before winter arrives to ensure projects are capable of accomplishing their designed function come potential spring floods.

So as we all work to deliver our projects, ask what I can do to accelerate completion of the current and future tasks on the way to project completion. Working with a sense of urgency, I am confident we can accomplish everything in the fourth quarter that we would.

Thanks ahead of time for your hard work in bringing this difficult task to successful completion. Good luck and let me know if you need my help.

Essayons!

A flashy finish

A group of school children from the Harwich Elementary School get a special finish to their Outreach Program visit at the Cape Cod Canal when Massachusetts Port Authority Fireboat "Howard W. Fitzpatrick" lets all fire cannons blast off when passing the group. During May and June the Cape Cod Canal hosted outreach programs for about 20 schools, with approximately 2,000 children and parents attending. (Photo by Kevin Burke)

Buckey Beaver (played by Frankie Morrisey) waves to fans during the Bourne July 4 parade.

Photo by Christina Zahniser

Park Ranger Jackie Zwalen passes out water safety flying discs to the parade attendees.

Photo by Christina Zahniser

Buckey and Park Rangers Jackie Zwalen and Kim Morrisey bring the Canal's safety message to parade-goers.

Canal Rangers spread safety message at July 4th parade

Park Rangers from the Cape Cod Canal brought their water safety message, and a furry friend, to local residents when they participated in the town of Bourne's Independence Day parade, July 4.

Thousands of Cape Cod residents, some bussed from the other side of the Canal, lined the one-mile parade route, waving American flags and cheering appreciatively as parade participants marched passed. Buckey Beaver, played by Park Ranger Frankie Morrisey, waved to the enthusiastic crowd from a decorated Canal pickup truck driven by Park Ranger Abigail Clark. Park Rangers Jackie Zwalen and Kim Morrisey served as Buckey's entourage, donning water vests to keep with the Water Safety theme and passing out Water Safety flying discs along the parade route.

The parade was the first in Bourne in about 20 years. A local fireman and his wife coordinated the parade so that residents and their children could celebrate Independence Day as a community. The New England District participated in the parade at the request of the event coordinators. Other parade participants included the U.S. Coast Guard, the National Marine Life Center, and local public works, fire and law enforcement personnel.

Zachary Russell sits in the driver's seat as dad Tim Russell looks on.

Photos by Jessica Russell

Buffumville Lake Park Rangers prepare for the day's events.

Festival teaches safety to the 'Wee' ones

by Timothy Russell
Buffumville Lake

Employees at Buffumville Lake demonstrated their concern for children's safety whey they partnered with local organizations to sponsor the 2nd Annual Wee Fun Festival at the project, June 29.

The purpose of the event was to teach children how to be safe in a fun way as well as how to enjoy and protect the nation's natural resources.

About 283 children and caregivers attended the event and enjoyed beautiful weather and many activities held throughout the day. For most children, it was the first time they were exposed to Park Rangers as well as police officers and firemen from their local community.

Park Rangers led a light hike on the shoreline, ran a scavenger hunt in the park and set up tables for nature arts and crafts under the shelter. Park Rangers also set up a nature touch table where the kids enjoyed various animal mounts and live fish as well as bones and fur to handle and explore.

Throughout the afternoon water safety programs were given on the beach and children were invited to climb all over the project boat and receive free tattoos for attending the programs.

Charlton Police inspected car seats and talked with kids about vehicle safety. The Oxford Police Department brought a cruiser and patrol motorcycle that the kids got to explore.

The Oxford Fire Department let the kids try on fire fighting equipment and talked to them about fire safety. The children had fun running the sirens on the emergency vehicles while their caregivers cringed every time the air horns went off.

Kids Unlimited supplied free drinks, information and free time activities. Kids Unlimited Services also hosted the Molly Bish Foundation which did Child ID kits for anyone interested.

Following the event, many children who attended the Wee Fun Festival return to Buffumville Lake during the summer and tell the Park Rangers that they met them at the event.

Mounted animals were available for children to touch.

The Oxford Fire Department was on hand to discuss fire safety.

The Bourne Bridge as it looks today. The Bourne, the Sagamore, and (in background) Railroad Bridges are the only access to Cape Cod by land.

Cape Cod Canal bridges are well maintained

The tragic collapse of the I-35W Bridge on Aug. 1 in Minnesota has many in the country asking, "is the bridge that I use to travel safe?"

The question is a valid one – locally, according to the Federal Highway Administration's 2006 statistics, out of the 4,947 bridges in Massachusetts, 586 are structurally deficient and 1,974 are structurally obsolete.

Travelers to Cape Cod can rest assured that two Massachusetts bridges are not in danger of collapse. The New England District operates and maintains the Bourne and Sagamore bridges located in Bourne, Mass. Both bridges, which were simultaneously constructed and opened to traffic in 1935, are the only access to Cape Cod by land, and are well-maintained by the New England District.

The bridges are inspected every two years. The bridge inspection teams are meticulous in their work, which can take a month or more. "The steel members, expansion joints, bearings, concrete piers and concrete abutments, and deck surface all get inspected, which is a lot of items to gain access to and view," explained Frank Fedele, Canal Manager.

According to Fedele, access to a lot of these items require equipment staged to get the inspectors close enough to actually see the condition of each component being inspected. "Some of the work is accessed by climbing the steel members, which also takes time to do correctly and safely."

The District also paints the bridges regularly, but not just to make them look nice. "We paint the bridges in order to prevent deterioration of the steel components from rust and eventual section loss, which long-term could affect the structural integrity of the bridge," said Fedele. "The somewhat harsh marine environment to which they are exposed also affects the paint system life."

According to Fedele, in the past the bridges were scheduled to be painted every five to six years, but in recent times, it has been eight to ten years. The longer period between paintings is attributed to new paint systems used on the bridges. The recent repainting of the Bourne Bridge involved the removal by abrasive blasting of all existing paint and rust down to bare metal, followed by a multiple coat system that is more state-of-the-art than the previous paint systems.

"By removing the old system, we also removed all remaining lead paint from the bridge, which is obviously good for the environment," said Fedele. "This new system is designed to increase the time between paint projects, but since this is the first time we have used this on the Cape Cod Canal bridges (the Bourne and Railroad bridges to date), we will have to see how the paint system holds up to the exposure conditions over time."

Inspection team looks over the Sagamore Bridge. The Sagamore and the Bourne bridges are inspected regularly and each meticulous inspection takes at least one month to complete.

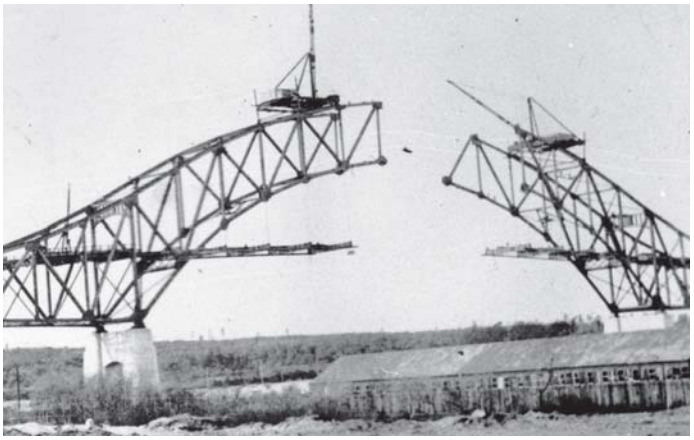
Approximately 60,000 vehicles travel the Bourne Bridge every day. The bridge was last inspected in 2006 and is scheduled for another inspection in August 2008. The bridge underwent substructure rehabilitation of the interior of the abutments in 2001 and received the new paint system as part of a project that was completed in 2006.

The Sagamore Bridge has slightly less traffic with about 54,400 vehicles traveling over it per day. Its last inspection was September 2005 and is slated to be examined in September of this year. The last major work on the Sagamore Bridge was repairs to concrete abutments in piers in 2000. The bridge was last painted in 1999.

Both bridges underwent major rehabilitation that included replacing the decks, repaving, repainting, installing twelve foot high suicide deterrent fences and on the Sagamore Bridge replacing the hanger cables. The hanger cables on the Bourne Bridge were replaced in 1986.

The Sagamore Bridge was constructed about two and one half miles from the eastern end of the Canal land cut, and the Bourne Bridge about one and two thirds miles from the western half of the land cut. Both bridges have a main span that measure 616 feet between centers of support and a vertical clearance of 135 feet above high water.

Solid construction, regular inspections, scheduled painting and other ongoing maintenance activities keep the Bourne and Sagamore highway bridges in good condition so that Cape Cod travelers only need to worry what beach they'll be visiting first.



Corps of Engineers contractors constructing the Sagamore Bridge in 1934. Left: Repair work being performed on the Sagamore Bridge.

Photos by Christine Johnson-Battista

The Border Patrol Station in Jackman, Maine. Col. Thalken (right) cuts the ribbon with Border Patrol officials at the Calais Station.

District cuts ribbons on new Border Patrol Stations

New England District personnel joined Congressional and Senatorial representatives in dedicating two new border patrol stations in Jackman and Calais, Maine.

A ribbon cutting ceremony for the Jackman project took place June 28 and another for Calais took place July 12. Col. Curtis Thalken, New England District Commander, represented the Corps of Engineers and spoke at both ceremonies. Construction of the Jackman and Calais Border Patrol Stations, totaling $17.6 million, are two of three stations the New England District had been tasked to construct to replace existing facilities. Additional project costs also included site selections, real estate acquisitions, environmental, design, contracting and construction management activities pushing total project costs above $10 million for each Border Patrol Station. The Department of Homeland Security (DHS) through the DHS Architect - Engineer Resource Center located at the Corps' Fort Worth District, has also directed the District to provide a new Border Patrol Station to replace the station in Van Buren, Maine.

The sites in Maine posed unique challenges for the contractor and New England District team. "First there's the weather," said Randy LeCuyer, New England District's Construction Representative at the Jackman site. "It's cold, then freezing cold, then cold again. Then there's mud season, then black fly season, then the mosquitoes come. September and October are nice and then it starts again."

The team also had to cope with a very ambitious construction schedule. "The contractor was required to construct the shell of the main building at each site and fully enclose it before the winter of 2005/2006 set in so that they could continue to work inside the building through the winter," said New England District project manager Tom Rosato. "If the contractor did not achieve this, construction would not be able to resume until May 2006 – a loss of six months – and the contractor would not have met the schedule which was mandated by the Border Patrol due to their operational needs."

Despite obstacles at both sites – the discovery of enormous boulders at the Calais site, and extreme wet conditions at the Jackman site, the contractor was able to complete the buildings before the window of opportunity closed.

The remoteness of the sites also posed challenges to the team. "The nearest lumber yard or full-scale hardware store is over two hours away, so you really needed to plan your work," said LeCuyer. "Running down to the store for the right size screw was out of the question."

JCN Construction Company of Manchester, N.H., the District's contractor for both facilities, began work on the facilities in May 2005. JCN constructed the base buildings, garage and vehicle maintenance bays. The main buildings were completed and turned over to the Border Patrol in early November 2006 at which time the Border Patrol began to occupy them. The garages and vehicle maintenance bays were completed and turned over to the BP a few months later in February 2007.

The experience of working on the projects was not completely unpleasant. The remote sites provided breathtaking views. "It's beautiful up there," said LeCuyer. "The

mountain and lake views in the Jackman/ Moosehead Lake area are incredible. And for a nature lover like me, the moose and deer are plentiful."

In addition, working with the Border Patrol was a positive experience. "The Border Patrol was great to work with," said Craig Hysler, Construction Representative at the Calais site. "These guys in the field know what their needs are and were very quick to respond when we needed answers."

"The challenges of an expedited construction schedule to meet the Border Patrol operational requirements combined with the short construction season in northern Maine due to extreme weather conditions along with the remoteness of the sties were known," said Rosato. "However, unknown to all were the evolving construction needs of the customer and the challenges of obtaining funds in a timely manner. All of the above made the accomplishment of this project ahead of schedule and within budget truly remarkable."

The Jackman and Calais Border Patrol Stations recently received the Public Project of the Year from the New England Chapter of the Construction Management Association of America. According to the CMAA, the projects received the honor because, "the projects were extraordinary due to the skill of the project team in addressing the challenges of specialized construction systems, scope changes and extreme weather conditions, while maintaining a high level of construction safety, meeting an aggressive schedule and successfully managing the project costs."

New England District team members who contributed to the success of this project over the last four years are numerous. Recent participants include Rosato, LeCuyer, Hysler, Gary Cooper, Ted Frazetta, Christine Johnson-Battista, Jim Morocco from Construction, Jennifer Flanagan, Deb Gabrielson, Frank Turner, Alex Garneau, Andy McAvoy from Engineering, and Rachel Raposa from Contracting.

Safety improvements at Otter Brook Dam

Corps of Engineers photo.

View of the six installed Fusegates from the left spillway abutment.

On June 7, about 25 attendees from the Northeast Region of the Association of State Dam Safety Officials Conference toured the dam safety improvements recently installed at the Otter Brook Dam project in New Hampshire. The dam safety improvements were substantially completed in the summer of 2006.

Otter Brook Dam has performed satisfactorily since being placed in operation in 1958. The project was in good overall condition, with the only significant dam safety concern being that the spillway could not pass the revised design flood (probable maximum flood – PMF) as computed under current hydrologic criteria.

During a hydrologic event for the magnitude of the revised spillway design flood, inflow at Otter Brook Lake would exceed spillway capacity, overtopping the dam by about one foot and jeopardizing the embankment structure. Catastrophic failure of the dam during the spillway design flood would cause an estimated $92 million in property damage and place nearly 14,000 people at risk in the densely populated city of Keene, N.H., and other downstream communities.

A Dam Safety Assurance Report investigated remedial measures to resolve the deficiency due to changes in the state-of-the-art design hydrologic criteria. The recommended plan called for the construction of a new concrete spillway weir using mechanical fuseplugs, called Fusegates. The failure of each Fusegate in staggered succession would lower the spillway crest elevation, increasing spillway capacity sufficiently to discharge the PMF without overtopping the dam and also prevent an abrupt increase in spillway discharge.

The design for the spillway remedial measures included lowering the existing spillway grade about four feet and installing six concrete Fusegates. These Fusegate units are designed to overturn due to uplift pressures resulting from flow entering the inlet wells and the upstream hydrostatic forces resulting from the storm event. The overturned Fusegate is then washed away by the flood. The design of each unit has a different failure water elevation as determined by the inlet well height, which varies with each Fusegate.

The Architect Engineer, Hydroplus, Inc., designed the Fusegates. The construction contractor, George R. Cairns, Inc., utilized precast concrete units for the Fusegates. The construction contract was completed on time and budget, excluding requested changes. (*Editor's Note: The Otter Brook Dam project team submitted this article. The Project Manager is Greg Buteau.)*

Ray honored for work on environmental program

One of Regulatory Division's top project managers recently received high honors for her work on an important Regulatory Program.

Diane Ray received a Commander's Award for Civilian Service from District Commander, Col. Curtis Thalken, July 18 in the Regulatory Division Offices. Ray received the award for, "selfless service and leadership to the Regulatory Program in the development and deployment of the Operations & Maintenance Business Information Link Regulatory module (ORM)."

Diane Ray (2nd from left) and colleagues in Washington for ORM.

Col. Thalken credited Ray's achievements as increasing the positive image of the District's Regulatory Program. "The reputation of New England District's Regulatory Division is famous throughout the Corps," he said during the presentation. "Your expertise is nationally recognized."

"I was honored to receive the award and I must admit that I didn't realize just how prestigious the Commander's Award is and how much is involved in the process," said Ray. "It made me feel that all the time and effort that I put into ORM2 is truly appreciated by my supervisors."

The ORM is the management program that assists the Corps Regulatory Program manager to protect United States waterways and wetlands through the evaluation of permit applications and enforcement activities.

"ORM is designed to provide a single source for all permit application information through a web interface, allowing Corps Regulatory staff to efficiently manage the permit application process," said Robert DeSista, Chief, Enforcement Branch for Connecticut and Rhode Island. DeSista is also Ray's supervisor. "It allows projects to be tracked and managed efficiently at the District level."

ORM was introduced two years ago when it replaced an older Regulatory System called RAMS. A newer version, ORM2, has just come out. "ORM2 is web-based, RAMS wasn't, which allows for upgrades and changes to be made globally, not on each individual computer," explained Ray. "ORM2 is maintained by Corps employees (CRREL), not a contractor. ORM2 will allow the tracking of data to complete GAO and Headquarters data calls and provide tools for Project Managers and Supervisors to manage workloads and assure data is correctly entered into the system."

The new ORM2 is accessible to federal and state resource agencies to transmit comments, to receive e-applications, to provide processing information to the public and to provide regional and national data to assist in resource impact and mitigation tracking and protection.

During the transition from RAMS to ORM, Ray became an expert on both systems. She took the knowledge she gained and passed it on to others, not only at New England District, but Corps-wide.

"Diane has truly become the person to go to for all matters dealing with ORM," said DeSista. "She has willingly provided assistance and guidance to innumerable people on a daily basis in New England, throughout North Atlantic Division and at Corps Headquarters. Diane has become an integral force that has kept New England District's critical ORM system functional every day."

Volunteer looks to the stars for interpretive inspiration

Story and photos by
Claudia Hixson, Buffumville Lake

Mr. Craig Cortis of Oxford, Mass., is one of Buffumville Lake's longest serving volunteers. From April to October, on select Sunday evenings, Mr. Cortis brings his telescope and knowledge of the night sky to the top of Buffumville Dam for the public to share and enjoy.

Since this is his eighth year with our project, I sat down with him and asked some questions about why he provides the programs and to hear some of his thoughts on the cosmos.

Claudia Hixson: Why do you do your stargazing programs?

Craig Cortis: Astronomy was a central part of my life and I've always had an interest in the natural sciences. After a professional setback years ago, I decided to focus on this field and self-educated myself for three years in the stars and planets. Sharing this knowledge gives me purpose.

CH: What equipment do you use?

CC: I use a 70 millimeter diameter refractor scope and a 6- inch Newtonian reflector. Useful scopes run from $150 to thousands of dollars but binoculars and the naked eye are also fine because they give the bigger picture, not just a tiny view. There is beauty in the entire panorama.

CH: How could the ancients picture bears and horses in a few scattered stars?

CC: There are 88 constellations but only few resemble anything like what they are called. Ancient people needed to divide and section the sky. They needed to make sense of it and assigning characters to the heavens gave it additional importance.

CH: What can we see during your programs?

CC: That depends on the season and position of objects. Attendees will see at least one bright planet or more. Venus, Saturn and Jupiter are visible during some or all of summer 2007. The bright moons of Jupiter, all are easily seen, Earth's moon of course, bright clusters of stars can be observed and certain globular clusters 20-50 thousands of light years away. One will occasionally view galaxies beyond our own, such as the Andromeda Galaxy 3 million light years away. Other galaxies tens of millions of light years distant can also be seen! Light years so ancient that they began traveling to Earth when dinosaurs were around. That is the great draw -- ancient light and the grandeur and mystery of nature. I may also be able at times to point out clouds of dust and gas called Nebula-the nurseries of stars. Sometimes double and multiple star systems linked by gravity display attractive, contrasting colors.

Craig Cortis, Buffumville Lake volunteer, hosts stargazing programs during summer months.

CH: What about the demotion of Pluto as a planet?

CC: It doesn't really matter. What does matter is increasing the ways to classify large objects beyond Neptune as important.

CH: I can't resist, I have to ask you about the possibility of UFOs and life in other parts of the universe.

CC: I wouldn't rule anything out. Earth may be a fluke in all of creation or there may be intelligent, technologically-capable life forms elsewhere.

(We both agreed that distance and time work against visitation by any mode we now understand. For instance, a probe from Earth traveling 54,000 miles per hour would take 52,000 years to reach our nearest star. Unless life spans are much longer and/or travel is infinitely quicker in distant societies, meetings are unlikely.)

CH: If you could view the stars from anywhere, where would it be?

CC: I favor the southern latitudes, from Florida's Everglades to what would be the very best areas on Earth: remote, light pollution-free regions in the southern hemisphere, with Chile, Australia, and Namibia as being supreme.

CH: Why?

CC: Just by coincidence, the richest, most impressive sections of the night sky happen to be visible only from certain southern latitudes. Such regions do not rise above the southern horizon from the continental U.S.

Craig Cortis can be joined on select Sunday nights at Buffumville Dam. Visit our current events site on the web at http://www.nae.usace.army.mil/recreati/bvl/bvlevent.htm or call 508-248-5697.

Dredging up the past . . .

Rosalind and Dennis Waskiewicz can't help but laugh at a joke cracked by Col. Brian Osterndorf as he fastens Waskiewicz's retirement pin on his jacket in this March 1, 2001 photo. Waskiewicz retired with 30 years of service.

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